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ARIZONA CORPORATION COMMISSION
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BEFORE THE ARIZONA CORPORATION COMMISSION

CARL J. KUNASEK
CHAIRMAN
JAMES M. IRVIN
COMMISSIONER
WILLIAM A. MUNDELL
COMMISSIONER

IN THE MATTER OF THE APPLICATION OF
U S WEST COMMUNICATIONS, INC. A
COLORADO CORPORATION, FOR A HEARING
TO DETERMINE THE EARNINGS OF THE
COMPANY, THE FAIR VALUE OF THE
COMPANY FOR RATEMAKING PURPOSES,
TO FIX A JUST AND REASONABLE RATE OF
RETURN THEREON AND TO APPROVE RATE
SCHEDULES DESIGNED TO DEVELOP SUCH
RETURN.

DOCKET NO. T-01051B-99-0105

STAFF'S NOTICE OF FILING
TESTIMONY

The Arizona Corporation Commission Staff ("Staff") hereby files the Testimony of
Michael L. Brosch, William Dunkel, and Harry M. Shooshan III in Support of its October 20, 2000
Settlement Agreement with Qwest Corporation ("Qwest") formerly U S WEST Communications,
Inc.

RESPECTFULLY SUBMITTED this 27th day of October, 2000.

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2 foregoing were filed this 27th day of October,
2000 with:

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BEFORE THE ARIZONA CORPORATION COMMISSION

**IN THE MATTER OF THE APPLICATION)
OF U S WEST COMMUNICATIONS, INC.,)
A COLORADO CORPORATION, FOR A)
HEARING TO DETERMINE THE)
EARNINGS OF THE COMPANY FOR) DOCKET NO. T-01051B-99-105
RATEMAKING PURPOSES, TO FIX A)
JUST AND REASONABLE RATE OF)
RETURN THEREON, AND TO APPROVE)
RATE SCHEDULES DESIGNED TO)
DEVELOP SUCH RETURN)**

SUPPLEMENTAL TESTIMONY OF

MICHAEL L. BROSCHE

ON BEHALF OF

ACC UTILITIES DIVISION STAFF

October 27, 2000

**BEFORE THE
ARIZONA CORPORATION COMMISSION
SUPPLEMENTAL TESTIMONY OF
MICHAEL L. BROSCH**

1 Q. Please state your name and business address.

2 A. My name is Michael L. Brosch. My business address is 740 North Blue Parkway, Suite
3 204, Lee's Summit, Missouri 64086.
4

5 Q. Are you the same Michael L. Brosch who previously submitted prepared Direct and
6 Surrebuttal Testimony in this Docket?

7 A. Yes. My qualifications and work experience were provided in my Direct Testimony.
8

9 Q. What is the purpose of your Supplemental Testimony in this Docket?

10 A My testimony explains the revenue requirement included within the Settlement
11 Agreement between Staff and Qwest (previously U S West Communications) and why
12 such revenue requirement is reasonable and in the public interest. I also describe the fair
13 value rate base, rate of return and adjusted operating income findings associated with the
14 Settlement Agreement and why the Commission should find such amounts reasonable.
15

16 Q. What is the total revenue increase Qwest may implement under the Settlement
17 Agreement?

18 A. \$42.9 million is the maximum revenue increase that can be implemented. Of this
19 amount, approximately \$17.6 million is to be implemented as an immediate revenue
20 increase, while the other \$25.3 million represents authorized increases in overall revenue
21 from a basket of competitive services that Qwest may elect to implement in the future.
22

23 Q. Is the \$42.9 million rate increase the result of negotiations between Staff and Qwest?

24 A. Yes. While I did not participate in the actual negotiations, I provided advice and
25 assistance to the Staff in preparing for such negotiations. I advised the Utilities Division
26 Director and Staff Counsel that the \$42.9 million amount was, in my judgment,
27 reasonable and consistent with the public interest.
28

29 Q. Was the \$42.9 million revenue requirement amount the result of issue-by-issue
30 negotiations between Staff and Qwest?

31 A. No. My advice to Staff was based upon judgments associated with the litigation risk of
32 presenting and arguing the many issues set forth in Staff's and other parties' prefiled

1 evidence. It is my understanding that Qwest engaged in its own assessment of such risks
2 and presented settlement offers reflective of possible outcomes if the issues were
3 litigated. However, there was no issue-by-issue negotiation and the total revenue
4 requirement that was agreed upon is not premised upon specific outcomes for particular
5 issues. The Settlement Agreement should not be viewed as an agreement regarding any
6 ratemaking theories or positions that are at issue in this Docket. Rather, the Settlement is
7 a compromise of all of the issues between Staff and the Company.

8
9 Q. Why is a \$42.9 million rate increase reasonable and in the public interest?

10 A. Staff's prefiled direct evidence supported a rate increase of \$7.2 million, after making
11 many accounting adjustments and significantly reducing the Company's requested rate of
12 return. In contrast, the Company's filing supports a total revenue increase of \$201.2
13 million. Schedule E within the ACC Staff Joint Accounting Exhibit is a one-page
14 reconciliation of the many issues between Qwest and the Staff that make up the
15 approximately \$194 million in dispute between Qwest and the Staff in this Docket. Line
16 2 of Schedule E indicates a \$29.2 million difference in recommended rates of return
17 associated with Qwest's requested 14 percent return on equity versus the Staff's
18 recommended 11.75 percent ROE. With respect to original cost rate base issues, Staff
19 and Qwest differ by only \$1.8 million in revenue requirement (Schedule E, Line 12,
20 column D). However, at lines 15 through 45, many operating income adjustments are
21 summarized that total \$153.6 million in revenue requirement value (see Line 49). Most
22 of the major issues shown in this listing are vigorously disputed by Qwest. Several of the
23 issues in dispute have no guiding precedent in prior ACC rate orders. If Staff were to not
24 prevail on only a few of the larger operating income adjustments, the resulting approved
25 rate increase would be much larger than the \$42.9 million in the Settlement Agreement.
26 Additionally, if the Commission were to grant a return on equity only modestly higher
27 than Staff's 11.75 percent recommendation, the resulting rate increase could be much
28 larger than Staff has recommended.

29
30 Q. What is the approximate revenue requirement impact of one percent in return on equity,
31 applied to Staff's proposed rate base?

32 A. Each one percent (100 basis points) is worth about \$12.6 million in revenue requirement.
33 While it is not possible to accurately predict what the Commission may have found
34 reasonable with respect to Qwest's Arizona ROE, it should be noted that the total spread
35 between Qwest's and Staff's recommended ROE was 2.25 percent (225 basis points).

1 Q. Which of the operating income adjustments proposed by Staff have no guiding precedent
2 in prior ACC rate orders?

3 A. Adjustment C-13 (Line 28 of Schedule E) reflects adoption of the new SOP 98-01
4 accounting pronouncement for computer software costs, causing certain software costs
5 previously expensed to now be capitalized on the books. This adjustment is contested by
6 Qwest and has the effect of reducing test period revenue requirements by \$32.8 million in
7 Staff's filing. Another issue not previously addressed by an ACC order is Staff's
8 proposed disallowance of certain of Qwest's incentive compensation plan expenses (Line
9 27 of Schedule E). This adjustment is contested by Qwest and has the effect of reducing
10 test period revenue requirements by \$5.5 million in Staff's filing. Staff's Operating
11 Income Adjustment C-29 challenges Qwest's proposed allocation of costs to the rural
12 exchanges being sold in Arizona, reducing revenue requirements by \$11.4 million (Line
13 44 of Schedule E). This issue has not previously been addressed in any ACC rate order.
14 Staff has also proposed the reversal of Qwest's adjustment to reflect wage rate increases
15 granted and effective after the end of the test period in Adjustment C-14 (Line 29 of
16 Schedule E). Qwest has argued that this Staff position, which reduces revenue
17 requirement by \$13.3 million, is contrary to the precedent established in prior ACC rate
18 orders. While Staff believes its position is fully supported in prefiled evidence for each
19 of these adjustments, it is entirely possible that litigation of these issues and other Staff
20 adjustments may result in much higher revenue increases in the final rate order than have
21 been agreed upon through settlement.

22
23 Q. Is it significant that more than half of the authorized net overall rate increase for Qwest in
24 the Settlement Agreement represents an opportunity to increase revenues from
25 competitive services in the future?

26 A. Yes. In the absence of settlement, most or all of the revenue requirement ordered by the
27 Commission might have been assigned to less competitive services, including basic local
28 exchange services. Under the Settlement, intrastate access charges and certain base rate
29 area and zone connection charges are actually reduced, while much of the rate increase is
30 directed to competitive services that can be increased up to \$25.3 million only to the
31 extent market conditions permit such increases to be realized. Mr. Dunkel addresses the
32 Settlement rate design in his Supplemental Testimony.

33
34 Q. Are future year rate reductions also contemplated by the Settlement?

35 A. Yes. Two future annual intrastate access charge rate reductions of \$5 million each are
36 scheduled to occur, which may be offset by increases in revenue from competitive

1 services. In addition, through action of the productivity offset and consumer dividend
2 under the Plan, further reductions in Arizona intrastate revenues are also possible.
3

4 Q. What fair value rate base value underlies the Settlement?

5 A. The parties have agreed that Qwest's jurisdictional Arizona fair value rate base is
6 \$1,445.8 million. This is the amount shown at Staff Schedule A, Line 1, in Column F.
7

8 Q. What fair rate of return underlies the Settlement?

9 A. By agreement of the parties, the fair rate of return is 9.61 percent. This is the return
10 percentage shown at Staff Schedule A, Line 2, in Column F. This rate of return, when
11 applied to the Fair Value Rate Base on Line 1, produces a Required Operating Income of
12 \$138.9 million, as shown on Line 3. In light of the many operating income issues in
13 dispute and the uncertainties associated with litigating these issues, Qwest and the Staff
14 jointly concluded through negotiation that Adjusted Net Operating Income of \$113.7
15 million is reasonable for ratemaking purposes. The resulting rate increase needed by
16 Qwest is the \$42.9 million in the Settlement Agreement. These calculations are
17 summarized below:
18

SETTLEMENT VALUES	\$ MILLIONS
Fair Value Rate Base	\$1,445.8
Fair Rate of Return	<u>9.61%</u>
Required Operating Income	\$138.9
Adjusted Net Operating Income	<u>113.7</u>
Operating Income Deficiency	\$ 25.2
Gross Revenue Conversion Factor	<u>1.6995</u>
Total Increase in Revenue Required	\$ 42.9

19
20 Q. In your opinion, will the rate increases and overall revenue requirement included in the
21 Settlement Agreement produce just and reasonable rates that are in the public interest?

22 A. Yes.
23

24 Q. Does this conclude your Supplemental Testimony?

25 A. Yes.

BEFORE THE
ARIZONA CORPORATION COMMISSION

IN THE MATTER OF THE APPLICATION)
OF US WEST COMMUNICATIONS, INC. A)
COLORADO CORPORATION, FOR A)
HEARING TO DETERMINE THE EARNINGS) DOCKET NO. T-01051B-99-0105
OF THE COMPANY FOR RATEMAKING)
PURPOSES, TO FIX A JUST AND)
REASONABLE RATE OF RETURN THEREON)
AND TO APPROVE RATE SCHEDULES)

TESTIMONY
OF
WILLIAM DUNKEL
PERTAINING TO SETTLEMENT
ON BEHALF OF
THE STAFF OF THE ARIZONA CORPORATION COMMISSION

OCTOBER, 2000

1 I. INTRODUCTION

2

3 Q. ARE YOU THE SAME WILLIAM DUNKEL WHO PREVIOUSLY SUBMITTED DIRECT

4 AND SURREBUTTAL TESTIMONIES IN THIS PROCEEDING?

5 A. Yes.¹ My qualifications and experience were included in my Depreciation Direct testimony in

6 this proceeding.

7

8 Q. WHAT IS THE PURPOSE OF THIS SUPPLEMENTAL TESTIMONY?

9 A. The primary purpose of this Supplemental testimony is to explain the rate design portions of the

10 Settlement Agreement between Staff and Qwest.

11

12 Q. IS THE RATE DESIGN INCLUDED IN THE SETTLEMENT A RESULT OF

13 NEGOTIATIONS BETWEEN STAFF AND QWEST?

14 A. Yes. I did not participate in the actual negotiations. However, I did provide assistance and

15 advice to Staff during such negotiations. The Settlement is a compromise of issues between

16 Staff and Qwest.

17

18 Q. WHAT SERVICES ARE INCLUDED IN BASKET 1?

19 A. Basket 1 generally contains the retail services that this Commission has not found to be

20 competitive.

21

¹ Throughout this testimony, my "Direct testimony on Modernization, Depreciation, and RCNLD Issues" will be referred to as my Direct Depreciation testimony. My "Direct Testimony on Rate Design Issues" will be referred to as my Direct Rate Design testimony.

1 Q. WHAT IS THE RATE DESIGN FOR THOSE SERVICES THAT ARE IMPORTANT TO
2 UNIVERSAL SERVICE?

3 A. The residential and business basic exchange service rates have a "hard cap", such that the prices
4 for those services cannot increase during the term of this plan. The services that are hard capped
5 include flat rate residential; flat rate business; 2 and 4 party service; exchange zone increment
6 charges; low use option service; service stations service; telephone assistance programs;
7 individual PBX trunks, including features; Caller ID block; toll blocking; 900/967 blocking; and
8 basic listing service.

9
10 In addition, the current non-recurring residential charge of \$46.50 is reduced to \$35. This
11 reduction will make it less costly for customers to connect to the network. Therefore, this
12 reduction, along with the fact that the residential rates will not increase, is beneficial to universal
13 service.

14
15 The Settlement also eliminates the residential and business zone connection charges. These are
16 non-recurring charges that, under certain circumstances, apply to customers outside of the base
17 rate area, in addition to the standard non-recurring charges. The elimination of these additional
18 non-recurring charges is also beneficial to universal service.

19
20 Q. WHAT CHANGES ARE THERE IN THE ZONE CHARGES?

21 A. In addition to the elimination of the additional zone connection charges as discussed above, the
22 base rate area is expanded in certain areas. This means there will be fewer customers paying the

1 zone charges. For those customers that continue to pay these charges, there is no change in the
2 rates.

3
4 The Settlement also will result in the elimination of the multi-party services.

5
6 Q. WHAT CHANGES OCCUR TO DIRECTORY ASSISTANCE (DA)?

7 A. The Company will be allowed to immediately increase the current DA rate of 47 cents to 85
8 cents. The one-call allowance that currently exists would be eliminated. At the 85 cent rate,
9 customers will also receive "call completion" service at no additional charge. After the first year,
10 the Company could increase that rate further, subject to the overall price cap restraints that apply
11 to Basket 3.

12
13 Q. WHAT CHANGES ARE THERE IN THE INTRASTATE CARRIER SWITCHED ACCESS
14 CHARGES?

15 A. The switched access charges applicable to the carriers would be changed so as to reduce
16 revenues by \$5 million in the first year, an additional \$5 million in the second year, and an
17 additional \$5 million in the third year. In total, over the life of the plan, the switched access rates
18 would be reduced by \$15 million per year.

19
20 Q. WHAT IS AN EXAMPLE OF A PRIVATE LINE SERVICE, AND WHAT DOES THE
21 SETTLEMENT PROPOSE FOR THEM?

22 A. Most private lines are not connected to the switched network, and instead are dedicated to a
23 particular function. For example, data lines that go to automatic teller machines (ATMs), or to a

1 bank's burglar alarm system, are frequently private lines. Evidence in this case indicates that
2 private line service rates are below cost. The Settlement includes a \$13.7 million annual increase
3 in private line revenues.
4

5 Q. DO YOU BELIEVE THE RATE CHANGES DISCUSSED ABOVE ARE REASONABLE
6 AND IN THE PUBLIC INTEREST?

7 A. Yes, I do, recognizing that this is a compromise. The reduction of the non-recurring charges, the
8 expansion of the base rate areas, and the "hard cap" on basic exchange and related rates, are
9 beneficial to universal service.
10

11 In addition, the "inflation minus productivity" indexing mechanism has the effect of sharing the
12 industry wide productivity gains with the ratepayers, and may result in a further reduction of
13 rates in Basket 1.
14

15 Q. WHAT SERVICES ARE CONTAINED IN BASKET 3?

16 A. Basket 3 services include flexibly priced, competitive services. These include services that the
17 Commission has determined to be competitive under ACCR14-2-1108, as well as new services
18 and service packages offered by Qwest.
19

20 Services that are in the non-competitive Basket 1 can be components of a "new" package that
21 would be offered in Basket 3. In an attempt to prevent this mechanism from being used to

1 transfer non-competitive Basket 1 services into Basket 3, the Agreement does require Qwest to
2 inform customers that the services in Basket 1 remain available as separate offerings.²
3

4 Q. ARE THERE RESTRICTIONS WHICH PREVENT QWEST FROM GEOGRAPHICALLY
5 DISCRIMINATING, AT LEAST FOR THE BASKET 1 SERVICES?

6 A. Yes. Part 2(c)(v) of the Agreement prevents Qwest from charging different retail rates in
7 different geographic areas, unless ordered by the Commission.
8

9 The Agreement does allow the "new" services and packages in Basket 3 to be offered to select
10 customer groups based upon their purchasing pattern or geographic location, for example.³
11

12 Q. WHAT IS ONE OF THE RESTRICTIONS THAT EXISTS ON PRICE CHANGES IN
13 BASKET 3?

14 A. The Agreement allows the Company to change rates in Basket 3 such as to produce \$25.3
15 million in additional annual revenues during the first year. This cap is adjusted upwards an
16 additional \$5 million in the second year of the Plan, and an additional \$5 million in the third year
17 of the Plan, to reflect the switched access charge reduction in those years.
18

19 Q. WHAT MODERNIZATION REQUIREMENT IS INCLUDED IN THE AGREEMENT?

20 A. As part of the Settlement of this case, there is no specific level of modernization or replacement
21 required. However, a review of Qwest's capital investments during the initial three years of the

² Paragraph 4(e).

³ Paragraph 4(g).

1 plan is expected to be one of the items reviewed and considered at the time Qwest asks for
2 renewal or revision of the Plan at the end of the three year initial plan period.⁴

3
4 Q. DO YOU BELIEVE THAT OVERALL, THE RATE DESIGN PORTION OF THE
5 SETTLEMENT IS REASONABLE?

6 A. Yes, recognizing that any settlement agreement is the result of negotiations and "give and take."
7 I believe the overall rate design incorporated in the Settlement is a reasonable overall result.

8
9 Q. DOES THIS CONCLUDE YOUR SUPPLEMENTAL TESTIMONY?

10 A. Yes.

⁴ See page 6 of the Settlement Agreement.

STRATEGIC
POLICY
RESEARCH

BEFORE THE ARIZONA
CORPORATION COMMISSION

IN THE MATTER OF THE APPLICATION OF)
US WEST COMMUNICATIONS, INC., A)
COLORADO CORPORATION, FOR A)
HEARING TO DETERMINE THE EARNINGS)
OF THE COMPANY, THE FAIR VALUE OF THE)
COMPANY FOR RATEMAKING PURPOSES,)
TO FIX A JUST AND REASONABLE RATE OF)
RETURN THEREON AND TO APPROVE RATE)
SCHEDULES DESIGNED TO DEVELOP SUCH)
RETURN)

DOCKET NO. T-1051B-99-105

TESTIMONY OF
HARRY M. SHOOSHAN III
IN SUPPORT OF THE PROPOSED
SETTLEMENT AGREEMENT

STRATEGIC POLICY RESEARCH,
INC.

October 27, 2000

1 TESTIMONY OF
2 HARRY M. SHOOSHAN III
3 IN SUPPORT OF THE PROPOSED
4 SETTLEMENT AGREEMENT
5

6 Q. WHAT IS YOUR NAME AND OCCUPATION?

7 A. My name is Harry M. Shooshan III. I am a principal in, and co-founder of, Strategic
8 Policy Research, Inc. ("SPR"), an economics and public policy consulting firm
9 located at 7979 Old Georgetown Road, Suite 700, Bethesda, Maryland.

10 Q. DID YOU FILE DIRECT TESTIMONY IN THIS PROCEEDING?

11 A. Yes. I filed testimony on behalf of Staff in which I proposed a price cap regulation
12 plan for Qwest Corporation (formerly U S WEST Communications, Inc.) in
13 Arizona.

14 Q. WHAT IS THE PURPOSE OF THIS TESTIMONY?

15 A. I am filing this testimony in support of the Proposed Settlement Agreement offered
16 by Staff and Qwest. I believe that adoption and implementation of this Agreement
17 would benefit consumers, protect competitors and provide important incentives to
18 Qwest to innovate, become more efficient and improve service quality.

19 Q. HOW WOULD THESE OBJECTIVES BE ACHIEVED UNDER THE
20 AGREEMENT?

21 A. Adoption of the price cap plan proposed in the Agreement moves Arizona away
22 from the traditional form of public utility regulation that relies on setting a rate of
23 return as a means of controlling earnings and making decisions about the allowable

1 costs of each individual service.¹ This form of regulation had only an indirect effect
2 on prices charged by the utility.² Price cap regulation achieves many of the same
3 objectives but relies on direct regulation of prices. It also has the beneficial effect of
4 providing Qwest with the incentives to become more efficient and more innovative,
5 and to make new investments more rapidly. In all of these respects, price cap
6 regulation more closely mirrors the effects of a fully competitive market which
7 should be the goal of regulation.

8 Q. WOULD YOU BRIEFLY EXPLAIN THE BENEFITS OF PRICE CAP
9 REGULATION AS OPPOSED TO TRADITIONAL PUBLIC UTILITY
10 REGULATION?

11 A. Yes. Telecommunications markets are being transformed rapidly as a result of new
12 technology, changing customer needs, and public policy reforms. This
13 transformation has been accelerated by the emergence of the Internet, which has
14 evolved largely outside of regulation and has become a critical tool not only in the
15 workplace but also in the home.

16 The major suppliers of telecommunications services are also changing as well as the
17 result of both vertical and horizontal mergers. The acquisition of U S WEST by
18 Qwest is an example of the former.

19 As a result of these changes, companies are now in many different lines of business.
20 Some of these businesses are essentially vestiges of the old local telephone
21 monopoly; but many are not. The services being offered by telecommunications
22 providers, even at the local level, are also much more "feature-rich" and complex
23 than they were in the days of monopoly-provided "plain old telephone service."

24 It follows that, in today's environment, regulating earnings at the corporate level is

¹ This form of regulation is frequently referred to as "cost-plus regulation."

² The firm is permitted to set its prices so as to recover its prudently incurred costs plus the specified rate-of-return.

1 an extremely inefficient and indirect way to control what we really care about— the
2 prices charged to basic telephone customers who today may have limited (or no)
3 alternatives.

4 Moreover, earnings regulation distorts the primary signal the market gives to any
5 company to guide its behavior— its profits. On the other hand, the more narrowly
6 focused any regulation, the less market distortion it creates.

7 Price cap regulation also protects competitors and consumers who will continue to
8 rely on basic services offered by the incumbent firm (in this case, Qwest) during the
9 transition to fully competitive markets. As the number of services offered by
10 regulated firms increases and as the offerings become more complex (e.g., with
11 additional features and functions), it becomes difficult for the regulator to “know”
12 how to assign costs among those services. As a result, the process of assigning costs
13 becomes more arbitrary. The risks of “getting it wrong” increase as well.

14 By “promising” to give the regulated firm the opportunity to recover prudently
15 incurred costs, traditional regulation raises the risk that competitors and consumers
16 (especially of basic services) will be confronted with cross-subsidies. Price cap
17 regulation provides much more iron-clad protection for both consumers and
18 competitors against the possibility of cross-subsidy by the incumbent during this
19 transition. Because the prices of basic services are capped, the regulated firm (in
20 this case, Qwest) cannot expect to make up its competitive losses by increasing
21 those rates.

22 Price cap regulation also provides rate stability by locking in prices for basic services
23 within a predefined range that is specified in advance.

24 Finally, price cap regulation ensures that consumers will benefit directly from
25 productivity improvements in the form of decreased rates.

26 The benefits of price cap regulation have been recognized for some time and widely

1 discussed,³ and have moved forty states to adopt some form of price cap
2 regulation.⁴ I have included a chart prepared by SPR that provides a summary of
3 state regulation. (See Attachment C.)

4 Q. YOU HAVE IDENTIFIED THE BENEFITS FOR CONSUMERS AND
5 COMPETITORS. WHAT ARE THE BENEFITS FOR QWEST?

6 A. As I stated in my earlier Testimony, I believe moving to price cap regulation will
7 provide Qwest with important incentives to innovate, increase its investment in the
8 State, operate more efficiently and improve service quality. These results can also be
9 expected to benefit consumers and also those competitors who rely on Qwest's
10 network to provide all or part of their services (e.g., Internet service providers and
11 so-called "data LECs").

12 Q. WILL YOU COMPARE THE PRICE CAP REGULATION PLAN
13 CONTAINED IN THE AGREEMENT WITH THE PLAN YOU
14 PROPOSED IN YOUR DIRECT TESTIMONY?

15 A. The structure of the price cap regulation plan in the Agreement ("the Proposed
16 Plan") conforms with my recommendation. There are three "baskets" of services:
17 Basic/Essential Non-competitive Services; Wholesale Services; and Flexibly Priced
18 Competitive Services. The most important element of this structure is the creation
19 of a "wholesale" basket. As I stated in my earlier Testimony, placing wholesale
20 services in a separate basket permits the Commission to focus on these important
21 "inputs" that competitors rely on to compete with Qwest. Segregating these

³ I cited several articles in my earlier Testimony (see footnotes 5 through 13) and offer several more cites here. See Charles F. Stone and John Haring, "The Economics of Price Caps," *Alternatives to Traditional Regulation*, Harry Trebing and Patrick C. Mann, eds. (Proceedings of the Nineteenth Annual Conference of the Institute of Public Utilities: 1987), at 117-147. See also Alfred E. Kahn, "The Uneasy Marriage of Regulation and Competition," *Telematics* (September 1984), where Dr. Kahn describes the hazards of rate of return regulation in the context of competition and offers price index regulation as one of many improvements needed in regulation. In addition, I have attached to this testimony two articles that elaborate on the attributes of price cap regulation. See Attachments A and B.

⁴ I note that twenty-one states have actually abolished earnings regulation by statute. See Attachment.C.

1 services also permits reductions in intrastate carrier access charges to occur without
2 offsetting increases in rates for basic services (as Qwest had originally proposed in
3 this case). Under the Agreement, the phased reductions in carrier access charges
4 will, instead, be offset by providing Qwest with more "headroom" to adjust the
5 prices of flexibly-priced services in Basket 3.

6 The Proposed Plan also embodies my recommendation for an "inflation less
7 productivity" cap for Basket 1 and adopts my recommendation of a productivity
8 offset of 4.2 that includes the 0.5 "consumer dividend" I suggested. The Proposed
9 Plan, however, "caps" the cap at zero with no lower bound which means that, if
10 inflation exceeds productivity, the cap itself will not be raised, but, if as is more
11 likely, the productivity offset exceeds the rate of inflation, the overall cap will be
12 reduced forcing aggregate price reductions for the services in Basket 1. This is a
13 significant concession by the company in that it has accepted the risk of inflation for
14 the term of the price cap plan.

15 The cap for Basket 3 in the Proposed Plan differs from what I suggested in that it is
16 set at the initial weighted average price level of all services in the basket, subject to
17 annual updates in quantities. Basket 3 also includes "headroom" above the initial
18 prices to provide Qwest the opportunity to achieve its full revenue requirement
19 through the pricing of services in this basket. This change, among others, has been
20 made to conform the price cap plan to the constitutional and legal requirements
21 related to a "fair value" rate base and reasonable rate of return.

22 I still prefer the five-year term I proposed in my earlier Testimony to the three-year
23 term in the Agreement. However, for a state making the important transition from
24 earnings to price cap regulation, I certainly believe an initial three-year term is
25 reasonable.

26 Q. WILL YOU ENUMERATE THE SPECIFIC BENEFITS TO
27 CONSUMERS THAT YOU SEE IN THE AGREEMENT?

28 A. Yes. In addition to the benefits inherent in price cap regulation that I have already
29 noted, the Agreement contains a number of significant benefits to consumers and
30 competitors. The Agreement:

- 1 ■ **Rejects Qwest's original plan which called for \$88 million in overall**
2 rate increases⁵ and a \$ 32 million increase in rates for residential basic
3 services⁶;
- 4 ■ **Reduces existing rates** for some basic residential services (e.g.,
5 residential basic service nonrecurring charges are reduced by 25
6 percent) and for certain business services;
- 7 ■ **Initiates a "price cap" plan** that will place limits directly on the prices
8 that Qwest charges for services. The plan will run for three years, but
9 can be extended by the Commission;
- 10 ■ **Promotes rate stability by capping "basic services" for three-**
11 **years;** that is, they may not be increased, but may be reduced from
12 initial levels. These services include: flat rate residential, 2 & 4 party
13 service, low use option, telephone assistance programs, flat rate
14 business, individual PBX trunks, Caller ID block, and basic listing
15 service. Increases for other services are limited.
- 16 ■ **Enables consumers to benefit directly from Qwest's increased**
17 **productivity by adjusting the price cap in Basket 1.** This is in
18 addition to a Consumer Productivity Dividend that is included in the
19 initial price cap;
- 20 ■ **Subjects Qwest to new penalties in the form of bill credits for**
21 **failing to meet service quality standards;**
- 22 ■ **Requires Qwest to provide additional consumer information in its**
23 bill inserts, including information about the Commission's complaint
24 process;

⁵ Teitzel Supplemental at 52.

⁶ Allcott Direct Testimony confirmed by Teitzel Supplemental at 39-40.

- 1 ■ Lowers charges made by Qwest to long-distance carriers by \$15
2 million over the three years (and eventually to the interstate level), with
3 the result that long-distance prices for calls within Arizona will be
4 reduced;
- 5 ■ Encourages Qwest to offer a variety of new services and service
6 packages that will respond more directly to consumer needs and will
7 have the flexibility to price these new offerings to meet the demands of
8 the market.

9 **Q. HOW WILL THE AGREEMENT BENEFIT COMPETITORS AND**
10 **PROMOTE COMPETITION?**

11 **A.** As I noted previously, competitors benefit from the basket structure of the
12 proposed plan; that is, the creation of a separate wholesale basket that initially will
13 contain carrier access, unbundled network elements, local service resale and
14 payphone access lines. The pricing rules for these wholesale services are not
15 affected by the price cap plan. As a result, the proposed plan insures that prices
16 competitors pay for access to Qwest's local network will continue to be directly
17 regulated by the Commission. This will help promote the growth of competition in
18 Arizona and provide safeguards against possible anti-competitive pricing by Qwest.
19 Interexchange carriers, such as AT&T and WorldCom, further benefit from the
20 phased reductions in carrier access charges that are mandated under the Agreement.
21 The Agreement also retains the Commission's rules regarding imputation and
22 requires that prices for services and packages in Basket 3 (flexibly priced competitive
23 services) are set in excess of a cost floor (initially the Total Long Run Incremental
24 Cost or "TSLRIC") of the service or package.

25 **Q. IN YOUR OPINION, SHOULD THE AGREEMENT BE ADOPTED AS**
26 **PROPOSED BY THE PARTIES?**

27 **A.** Yes. I believe that Agreement is in the public interest and should be adopted by the
28 Commission.

1 Q. DOES THAT CONCLUDE YOUR TESTIMONY?

2 A. Yes.

13

REFORMING REGULATION OF LOCAL EXCHANGE CARRIERS OR IT /S BROKE, SO LET'S FIX IT!

by

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Alvin Toffler defined "future shock" as "the shattering stress and disorientation that we induce in individuals by subjecting them to too much change in too short a time." He also described the phenomenon as "the dizzying disorientation brought on by the premature arrival of the future." In reacting to the Federal Communications Commission's price cap proposal, Congressional leaders appeared to be suffering from future shock.

Actually, it was much worse than that. In view of the regulatory reform which has already taken place at the state level, Congress' dizzying disorientation appears to be resulting from the belated arrival of the present! A majority of states have adopted some measure of regulatory reform, and one state (Nebraska) has virtually eliminated economic regulation of telephone service. After lagging behind federal policymakers for decades, many state legislatures and regulatory agencies have moved ahead aggressively to revamp regulation.

If regulatory reform is so well established at the state level (with several jurisdictions adopting reforms which are much more radical than the FCC's proposal), why did the FCC's price cap plan for the local exchange carriers (LECs) get off to such a rocky start on the federal level? Why has Congress reacted so strongly to a rather modest reform?

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Telecommunications in a Competitive Environment, Proceedings of the Third Biennial Telecommunications Conference, sponsored by NERA, Inc., Scottsdale, Arizona (April 12-15-1989).

I. IF IT AIN'T BROKE, DON'T FIX IT

Notwithstanding the general enmity between the Democratic leadership in Congress and the Commission which developed during the Reagan administration, the fundamental problem is that the case for eliminating rate-of-return regulation of the LECs has not been effectively made. Congress' view appears to be, "If it ain't broke, don't fix it." Or, "if it is broke, prove it." Congress is reluctant to throw rate-of-return regulation overboard, when such regulation has worked well for over half a century.

While the FCC is moving ahead with implementing price caps for AT&T, regulatory reform for the LECs is very much in doubt. The telephone industry should be working from the premise that it has "lost" price caps; in other words, that it must start over in making the case for reform.

Despite the good intentions of the current FCC leadership and some encouraging language in the Commission's order, consider the following *facts*. The FCC which will ultimately vote on LEC price caps will be virtually brand new with at least three and probably four new members. While there will be a new Commission, there will be the same old skeptical (or hostile) Congress. And there will be another powerful player in the already formidable ranks of the opposition—AT&T.

This is not to say that the FCC's price caps proceeding has not been valuable. It has served to open the debate, establish positions of the various interest groups and put a number of options on the table.

However, there are important lessons to learn from the initial failure on the part of the LECs to achieve price caps. First, the industry (and the FCC for that matter) never presented a compelling argument for reforming regulation of the LECs. The FCC originally intended price caps as an interim step towards deregulation of AT&T—a firm which many at the Commission believed would be disciplined by market forces rather than by the price caps anyway. A strong case had been made for reduced regulation of AT&T in a series of papers written by influential FCC staffers and by academics. It was also believed that MCI, AT&T's major competitor and regulatory antagonist, would ultimately accept a price cap plan for AT&T as a means of ending forced reductions of AT&T's rates by the FCC.

However, after intense lobbying by the telephone industry (especially by the RBOCs), the FCC agreed to expand its price cap plan to include the LECs. Since it could not be argued credibly that telephone companies' market power is effectively constrained by competition, the FCC suggested that price caps for the LECs were desirable in order to "improve" regulation and encourage efficiencies. However, neither the FCC nor the telephone industry developed compelling arguments as to why traditional rate-base, rate-of-return regulation needed to be improved or why it was inefficient.

The FCC's initial proposal was greeted with widespread confusion and skepticism in the Congress. Was the FCC suggesting that the local exchange market was as competitive as the long-distance market? Why should firms with monopoly power be allowed to earn whatever level of profits they could? By mixing apples and oranges, the FCC had created a lemon for the LECs. Although the FCC and the telephone industry worked hard to make the case for LEC price caps, they were unable to dispel the initial doubts about the plan. The LECs could not overcome the perception that the FCC's price cap plan amounted to "giving away the store" to the industry. As a result, the Commission's credibility with Congress (which was already diminished as a result of partisan political differences and fundamental disagreements on mass media policy) suffered.

Acceptance of any price cap or incentive regulation plan depends on the credibility of the regulators in striking a deal with the industry that benefits consumers. If the FCC is to regain its credibility, it will have to convince Congressional leaders that regulatory reform is needed and that the public will benefit from the elimination of rate-of-return regulation. If the LECs are to achieve regulatory reform, they will also have to develop a convincing case for change. Otherwise, Congress has a right to be skeptical. If the policy makers do not accept your premise, then you cannot expect them to accept your conclusion.

In the "first round" of the price caps fight, politicians saw only the downside of change. After all, who supported LEC price caps except the LECs? This leads to the second major lesson to be learned from round one. The LECs must address the legitimate concerns of other interested parties, primarily ratepayers and organized labor. The key issues which must be dealt with in any plan are rate levels, quality of service and the extent to which productivity gains are achieved through reductions in the workforce.

II. TELECOMMUNICATIONS INFRASTRUCTURE

We argue in this paper that telecommunications regulation is failing to provide needed infrastructure to promote economic development and competitiveness of American industry. In short, we advance a public policy rationale for reforming the regulation of the LECs which can make the theoretical arguments about the shortfalls of rate-of-return regulation much more compelling to policymakers.

Regulatory reform is critical to stimulating the investment in telecommunications infrastructure (especially in the public switched network) that is needed in order for the United States to remain competitive in global markets and to retain its lead in computer technology. In recent years, the United States has lagged behind its foreign competitors in investing in its public telecommunications

IV. RATE-OF-RETURN REGULATION IN A CHANGING ENVIRONMENT

Before we discuss the shortcomings of rate-of-return regulation, we acknowledge that such regulation was quite effective in the past, when telecommunications was an end-to-end monopoly. Rate-of-return regulation protected customers, while providing stability to attract huge sums for investment in telecommunications facilities. Under rate-of-return regulation, telephone companies had adequate incentives to make "plain old telephone service" universally available.

The era of offering "plain old telephone service" in a monopoly environment is rapidly coming to an end. Both the nature of telecommunications investment and the economic environment in which such investment is undertaken have changed dramatically. As a result of these changes, traditional rate-of-return regulation no longer provides adequate incentives for investment.

Under rate-of-return regulation, regulators establish a limit that a firm can earn on its allowed investment base. This rate is established by estimating what unregulated firms with a similar degree of risk would earn in a competitive market. This type of regulation worked well in the past because it provided the stability necessary to attract large amounts of investment capital. Because firms operated in a monopoly environment and served a growing market, investments were relatively safe.

Now, however, telecommunications carriers operate in an increasingly competitive environment and must adapt to rapidly changing technology. Demand for new services is uncertain and firms frequently face competition in the provision of such services. Consequently, if a firm wishes to invest in a new service offering today, such as videotex, ISDN or video programming service, it will incur substantial risk. For example, providers of videotex services face competition from private vendors. ISDN services face competition from private systems. Video programming services must compete with established cable operators and video cassette rental outlets.

Nevertheless, an unregulated telecommunications company might choose to invest in the facilities needed to provide such services. Stockholders would lose if the ventures failed, but they would have the prospect of large profits if the ventures succeeded in the market. In either case, consumers would benefit from having more alternatives available, and the economy as a whole would benefit from the improved infrastructure.

V. ASYMMETRIES CAUSED BY RATE-OF-RETURN REGULATION

Unfortunately, rate-of-return regulation contains perverse asymmetries which discourage telephone companies from making risky investments. Under rate-of-return regulation, a company that undertakes an investment which results in a rate of return higher than that allowed by the regulators will be forced to lower its rates. If, however, that company suffers losses as a result of its investment, regulators are reluctant to permit the firm to recoup those losses through higher rates. Even if regulators could be convinced to permit rate increases, the company's ability to raise rates will be constrained as markets become increasingly competitive. Moreover, if the venture loses money, the regulators could actually disallow the investment and force the company's shareholders to bear the loss.

The investment climate created by rate-of-return regulation is, therefore, asymmetrical. It is a "heads, I win small; tails, I lose big" proposition for regulated firms. Shareholders reap few of the benefits of a highly profitable investment and yet might very well bear the entire loss associated with an unsuccessful investment. Since the symmetrical relationship between risk and return disappears, the riskier the investment, the less likely it is that it will be undertaken by a firm subject to rate-of-return regulation. While this asymmetry may have been acceptable in a monopoly environment where new investment could be made conservatively as markets or technology became established, it is untenable in a competitive environment where firms must offer innovative services to generate revenues.

VI. INCENTIVES FOR INVESTMENT

Ironically, rate-of-return regulation has been criticized over the years for encouraging over-investment. Therefore, the argument that investment is *discouraged* requires some elaboration. A distinction must be made between the type of investment undertaken in the past and the type of investment necessary today to develop new services and contribute productively to the telecommunications infrastructure.

Investments which result in new product or new service offerings typically involve substantial risk, since their success depends upon uncertain customer demand. These are precisely the investments that are necessary in order to modernize the U.S. telecommunications infrastructure and to keep pace with the level of investment being maintained by our foreign competitors. Under rate-of-return regulation, firms may overinvest in "safe" projects such as expansion of existing facilities but will be reluctant to incur the risk of offering innovative

services. However, safe investments alone will not provide an adequate telecommunications infrastructure to enable the United States to be competitive in the marketplace. By the time an investment becomes "safe," the United States may well be importing the technology and exporting the jobs related to that investment. Moreover, consumers will be harmed by the delay in bringing new services and products to the market.

In countries with a government-managed telecommunications system, the disincentive to engage in high-risk, high-return investment does not exist. Because investments are centrally directed, disallowance is not a danger. Although governments are traditionally risk averse, here they incur no risk. If an investment project supports a nation's infrastructure and contributes to economic development, the nation benefits even if the investment is not a commercial success. Private firms, however, benefit from an investment *only* if it is a commercial success. Therefore, under current regulatory policy, the introduction of new services is likely to take place overseas first. By the time U.S. companies are assured of the profitability of the new service and can justify the investment themselves, the risk will be lower but so will the benefits to the U.S. economy.

The above discussion is not intended to applaud government-managed systems but to point out one of the major reasons why other nations are making greater progress toward infrastructure modernization. Although the U.S. regulatory system has outperformed such government-managed systems for decades (and has even been emulated by some countries in privatizing their telecommunications carriers), that system must keep pace with changes that have occurred in the telecommunications environment. These changes include increased competition in some markets and a rapid rate of technological advance across the board which result in the need for modernization and innovative service provision. Only by *improving* the regulatory climate can the United States retain its leadership in telecommunications.

VII. REGULATORY REFORM: ENCOURAGING INVESTMENT

A regulatory policy that focuses on price instead of rate of return would promote vital new investments while continuing to protect telephone subscribers against monopoly abuses. By limiting the prices that firms can set, rather than their profits, regulators would encourage more risky investment. Because these price limits would be renegotiated periodically, firms would face implicit constraints against earning excessive profits. Although investment benefits would initially accrue to stockholders, they would ultimately accrue to ratepayers.

In effect, price regulation lengthens the "regulatory lag" associated with investment and permits more of the benefits of successful investment to flow through to stockholders. This situation encourages firms to undertake risky investments that have good prospects.

A regulatory policy that focuses on regulating price instead of profits also would restore the necessary balance between risk and return. Firms would assume the risk associated with an investment (because prices would be fixed, additional costs could not be recovered from ratepayers), but could then retain the profits that might accrue—at least until the plan for price regulation is renegotiated. If profits are considered excessive, ratepayers will ultimately benefit in the form of reduced rates when the price regulation plan is renegotiated. In the meantime, however, the investment has been made and the infrastructure benefits can be realized.

It is important to note that profits and consumer benefits are not mutually exclusive. From a consumer's perspective, the best industry structure is, in many respects, a competitive one. Firms in such a competitive industry must satisfy consumer needs or face shrinking market share and revenue losses. The first firm to provide consumers with a new product or service incurs substantial risk but can expect substantial profits if the venture is successful. Therefore, a firm in a competitive industry has a great incentive to undertake what are often risky investments in its quest for this profitable advantage. Consumers clearly benefit from these investments; they enjoy diversity and competitive entry (or the threat of entry) which keeps prices down.

When economies of scale prescribe a monopolistic market structure, firms must be regulated in order to protect consumers from potential abuses of monopoly power. However, the advantages of competition should not be ignored. Ideally, the regulatory environment should be such that consumers are as well off in terms of price and product offerings as they would be in a competitive market environment. Under rate-of-return regulation, consumers lose these important advantages.

A firm that is able to retain more of its profits is more likely to modernize and introduce new products and services more quickly in an effort to meet customer demand. These firms are likely to be much more responsive to customers than firms which stand little chance of profiting substantially from their anticipation of consumer needs. After all, in a competitive environment, it is the quest for profits that motivates the firm to satisfy customer demands.

In a competitive market, such profits do not last forever. Ultimately, competition forces the successful firm to pass supracompetitive profits on to consumers through lower prices. Under price regulation, such gains are passed on to consumers when the plan for regulating prices is renegotiated. In both cases, consumers reap the long-run benefits of successful innovation.

VIII. REGULATORY REFORM: THE NEED FOR A COMPELLING CASE

Traditional rate-of-return regulation is probably still adequate for firms that serve only secure, monopoly markets. However, the challenges in today's telecommunications industry go far beyond such markets. If the United States is to move rapidly forward into the information age, telecommunications carriers will have to invest aggressively in risky, competitive markets. Only in this way will the country have the public telecommunications infrastructure it needs to be competitive in the information services marketplace. Unfortunately, rate-of-return regulation provides inadequate incentives to encourage investment in risky, competitive markets.

The infrastructure and competitiveness arguments provide compelling support for replacing traditional rate-of-return regulation with some form of regulation which gives regulated firms more incentive to invest in new technology and to develop new services. The FCC and the telephone industry must make this case convincingly—backed up by hard data on, and in-depth analysis of, the strides being made by our foreign competitors. The debate must be refocused and the predicate for change must be established if policy makers at either the federal or state levels are to endorse real regulatory reform for the local exchange carriers. And, in refocusing the debate, the telephone industry must make certain, too, that the central theme is *regulatory reform* and not *deregulation*.

With the lessons of "round one" in mind, the telephone industry can achieve success but only if it takes nothing for granted and builds its case for change on a sound foundation.

LESSONS FROM THE BRITISH EXPERIENCE WITH PRICE CAP REGULATION

by

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The main objective of regulation is to bring about behaviour that is in the national interest. It is to encourage the regulated industry to behave according to the interests of its customers and sometimes, perhaps, also to pursue social goals. One of the main reasons for regulation is to prevent the abuse of monopoly power, the restriction of output and the charging of excessive prices. In this situation, many of the regulatory objectives can be thought of as aiming to bring about the same situation as would prevail in a competitive market. In a competitive market, a business must operate with reasonable efficiency or it will not be able to survive. Regulation should similarly encourage efficiency. In a competitive market, a firm which provided unacceptably low quality of service would find that its customers switched allegiance to a rival: it would suffer financial loss. Regulation should also aim to make a company suffer financial loss if it provides an unacceptably low quality of service. In such ways, the aim of regulation can be said to mimic competition.

A good deal of regulatory interest has recently focussed on methods of price control that have the desirable property of promoting efficiency in the manner of competitive markets. The so-called price cap method has relatively good incentive properties. The purpose of this paper is to describe experience with the use of price cap regulation in the United Kingdom and to discuss some of its advantages and disadvantages and some of the issues that arise in applying it.

I. EXPERIENCE IN THE UK

Price cap regulation was adopted in Britain in 1984 as a method of controlling the prices of British Telecom when it was converted into a private company. Permission to operate a telecommunications network is given in a licence which makes permission conditional on observance of a number of rules contained in the licence. Licences are issued by the Government in the first place, but I have powers to enforce them and also to amend them under a prescribed due process. Price control is applied under one of the rules in British Telecom's licence. The rule established in the original 1984 licence was that price increases should be limited to three percentage points below the rate of inflation for a period of five years. No formula was set down for price increases after the end of the five-year period, this being left to the licence amendment procedures. The price control rule actually applied to an average of prices so that individual prices could be increased by more or less the overall cap. The prices concerned were exchange line rentals (standing charges for dial tone) and direct dialed inland telephone calls, other than those made from public call boxes. The average was calculated as a weighted average, using revenues in the previous year as weights. Other prices were left without formal control. Within the controlled group of prices, exchange line rentals were subject to an individual limit of two percentage points above the rate of inflation; no floor was established for any prices.

British Telecom did not use the maximum allowed price increases in all years. For example, managers decided to forego permissible increase of a little over 1 percent in 1987. In 1986, average prices had to be reduced by about one-half of 1 percent, but the company took advantage of its flexibility to undertake a substantial rebalancing of prices.

In 1988, I began licence modification procedures to establish a new price control rule to come into effect in 1989 on the expiry of the original rule. My first step was to publish a consultative document. One of the questions asked by this document was about the desirability of continuing price cap regulation compared to the alternative of switching to some other method of control. Commentators were virtually unanimous in supporting a continuation of price cap regulation. No substantial body of opinion argued for a switch. To make a licence modification, I had to reach agreement with British Telecom or, if that agreement could not be obtained, to make a reference to the Monopolies and Mergers Commission and obtain their broad support subject, in either case, to publishing my proposals and allowing time for objections to be made. In the event, I was able to reach agreement, and the new rule is that price increases will be limited to 4.5 percentage points below the rate of inflation. The basket of services covered was extended to include operator-assisted calls. The individual limit of 2 percentage points above the rate of inflation was continued for exchange line rentals, and

connection charges were also brought under this control. The new rule will last for four years, and a further modification will, therefore, be needed in mid-1993.

British Telecom's original licence did not contain any rules about quality of service, and no formal amendment has been made to deal with this. The quality of service improved slightly after privatisation up to the end of 1986, but it then deteriorated during 1987. Some people assumed that this deterioration was attributable to the lack of regulatory incentive to focus on quality of service. Reducing quality of service, they argued, would save money and, as there was no penalty for it, would lead to an increase in profit. A more convincing explanation is that the main cause of the deterioration was actually a strike of engineering staff that occurred early in 1987. This led to the neglect of maintenance work with a serious cumulative effect in a system that was excessively dependent on old technology. Difficulties were compounded with teething troubles associated with the introduction of the more modern technology. Quality of service has subsequently recovered to the point at which it is better than it has ever been before. However, I do believe it is desirable for a regulatory system to contain financial incentives to improve quality of service, and I shall return to say more about this issue below.

II. PRICE CAP VERSUS RATE-OF-RETURN REGULATION

I next turn to consider the general merits of price cap regulation. The choice of regulatory approach is often depicted as a choice between "rate-of-return regulation" and "price cap regulation." Rate-of-return regulation is regarded as a method which begins with an assessment of allowable cost and allowable investment—the regulator's assessment of the appropriate levels assuming a reasonable level of efficiency—and then determines acceptable prices as the prices that are expected to yield a satisfactory rate of return on the investment, taking account of estimated costs. Under this approach, prices are normally assumed to be approved in detail, item by item. Price cap regulation involves limiting prices—perhaps average prices—according to a formula for a set period of time.

This dichotomization is an exaggeration and an oversimplification. In my opinion—and I shall discuss this issue in more detail below—setting a particular level for the price cap should depend on estimates of the consequences for rate of return on investment. The price cap should be set at a level which is expected to produce a reasonable rate of return. To that extent, the price cap regulation seems similar in basic approach to rate-of-return regulation, and the main difference is actually the length of time which elapses between successive regulatory determinations of prices. Rate-of-return regulation involves setting prices in advance but perhaps setting them annually. Price cap formulae have been fixed for

four or five years under British practice. This difference in term is important. It is fixing prices in advance that gives the approach its incentive properties. If prices are fixed, reductions in cost will mean increases in profit, and managers have an incentive to achieve greater efficiency to this end; the longer the term, the greater the gains from efficiency and the greater the incentives. However, if both approaches to price control depend on rate of return, they are similar, and this is the sense in which the dichotomization is an exaggeration. Perhaps it would be better to contrast short-term regulation and medium-term regulation rather than rate-of-return regulation and price cap regulation.

The contrast is an oversimplification, because we actually have available a family of price control measures rather than two clearly contrasting approaches. Rate-of-return regulation, under which prices are set for some future period, perhaps one year, can lead to profits which are different from expectations. Costs may be different from expectations, demand may vary, and so on. The regulated company may be required to accept the results, whatever they are. Alternatively, it may be required to make refunds to customers if rate of return exceeds some benchmark, and it could also be allowed to carry forward a shortfall and recoup it from subsequent revenues. If both these variants were to be adopted, we should have an extreme form of rate-of-return regulation under which incentive to improve efficiency would be at a minimum and certainty of result in terms of rate of return at a maximum. Without these variants, even rate-of-return regulation over a one-year horizon has some incentives to efficiency.

III. THE PRICE CAP HORIZON

Another way of looking at the family of regulatory arrangements is to consider the horizon of a price cap as variable. When a regulator sets a price cap, he or she is aware of taking some regulatory risk. The particular price cap chosen has to be based on estimates, and actual results are almost certain to differ from the estimates. Profits will be more or less than expected, and the regulator runs the risk of being criticised because the profits are "outrageously large" or, indeed, so small as to impair the operating capability of the company. The longer the horizon, the greater the risk. However, the longer the horizon, the greater also the incentive to efficiency. As the term of a price cap is shrunk, uncertainty and incentive both diminish, and the effect of the price cap comes closer to what I have called rate-of-return regulation. My experience with price cap regulation in Britain, including my experience of dealing with people who complained about prices from time to time, has led me to make the subjective assessment that in the telecommunications industry, under current conditions, the term of a price cap should be between three and five years. Below three years, the

incentive becomes too small, and above five years, the uncertainty becomes too great.

IV. MORE COMPLEX PRICE CAPS

The balance between incentive and uncertainty can be affected by additional devices which generate additional members of the family of price controls. One such device is that of "profit sharing." This device is normally presented as a one-way risk for the regulated company. Price cap regulation may be adopted as the basic approach, but the regulators declare a rate of return which they regard as reasonable. Surpluses above this rate of return are shared between the regulated company and customers in some agreed proportion—this means that some proportion of excess profits is converted into a refund to customers. The regulated company has the incentive of keeping some of the profits that result from its efficiency, but unexpected profits are also limited.

Another way in which the incentive/risk trade-off can be altered is to adopt a price cap that is more complicated than the basic inflation plus or minus "x" format. If the aim of price cap regulation is mainly to encourage efficiency, regulators will wish to create a situation in which profits depend on efficiency and not on other unexpected events such as unexpected growth or depression in the economy, which may affect the volume of demand for telecommunications services at a given price, or unexpected price changes outside the control of the regulated company. To achieve such a result, prices must be made to depend on these unexpected factors. For example, permitted prices charged to customers could be made to depend on the prices of supplies to the regulated company. This approach was adopted in the price control for British Gas, where prices depend on the price of input fuels. Similarly, prices could be controlled according to a more complicated formula under which they depended partly on volume. This kind of approach involves some hazards. Very few prices are completely incapable of being affected by managerial action. If unexpected cost changes are fed through completely to output prices, managers will have no incentive to buy efficiently. Similarly, volume changes depend partly on managerial efficiency and partly on circumstances beyond their control. However, some incentives can be retained by setting the formula at a level which provides partial compensation for unexpected results but not total compensation.

One of the minor advantages of price cap regulation is its ability to convey a simple and understandable message to customers and its being relatively easy to administer. The more complexities are added of the kind discussed above, the less this potential benefit is likely to be realised.

I therefore decided, in the UK, to stay with the simple version of the

formula. However, uncertainty in estimates of volume was a particular difficulty in the revision of the price cap rule last year, because of the British policy of encouraging competition and uncertainty about the effect of the regulatory arrangements on the share of the market that would be taken by British Telecom's competitor during the period of initial development of competition. To deal with this difficulty, I would have been prepared to consider some volume adjustment in the formula, but it eventually proved to be unnecessary.

V. THE LEVEL OF THE PRICE CAP

I next want to consider more directly the question of how the level of a price cap should be decided. Some people appear to take the view that the level of the price cap does not matter very much. They argue that the purpose of the approach is to give an incentive for greater efficiency and that the incentive arises more or less equally regardless of the level of the cap. Others would argue that the price cap should be equal to the rate of inflation minus a factor which represents an estimate of reasonably attainable improvements in productivity and that this level should be continued regardless of the level of profits at the start of the price cap period.

Neither approach seems to me to be economically efficient or politically realistic. Both approaches could lead to the earning of very high profits—profits that would be politically intolerable—and this would probably result in a political rejection of the whole approach. Furthermore, one has to consider the effects of the price control on matters other than simple operational efficiency. The price control should be consistent with giving appropriate incentives to invest up to an efficient level. This means that the regulated company should have a reasonable expectation of being allowed to earn an acceptable rate of return on investments that are worthwhile. Similarly, customers should be given the incentive to use the telephone system to an efficient level, and this will not happen if usage charges are too high.

All these factors persuade me to believe that the level of the price cap should be chosen as one that produces a reasonable expected rate of return. Sometime, this statement produces the shocked response that, surely, the whole idea is to get away from rate-of-return regulation. However, to say this is to misunderstand the argument. Creating an incentive to improve efficiency does not depend on neglecting rate of return but rather on fixing the price control for a fairly long period of time. This is the reason for my statement above that the important distinction is between short-term regulation and medium-term regulation rather than between price cap regulation and rate-of-return regulation.

When I revised the rule for controlling British Telecom's prices last year,

I explicitly based my approach on financial modelling. My staff prepared a detailed model for predicting British Telecom's profits given values for variables such as the level of demand, the rate of inflation, efficiency gains, input prices and the price control rule itself. We built up this model from information available about British Telecom's past results, from information provided by manufacturers about trends in equipment prices and from other sources. We provided our model to British Telecom, invited it to criticise the model and took account of the criticisms. Having validated the model, we used it to make predictions, and we settled on a price cap that would produce a reasonable rate of return, given our expectations of the behaviour of the variables.

VI. CARRY OVER

The way in which results at the end of a price cap period are carried over into decisions about the next price cap is important for the incentive effects of the control. The incentive to achieve efficiency gains is always likely to be strongest at the beginning of a price cap period, because the prospect then exists of enjoying the surplus profits for some time. Towards the end of the period, the regulated company is more likely to wish to convince the regulator that life is becoming difficult and large uncontrollable cost increases are being faced. This danger will be particularly great if prices are reduced at the start of a new price cap period to eliminate any excess profits being earned at the end of the previous period. In that event, the regulated company would certainly prefer to delay efficiency gains that could be made at the end of one period and take them instead at the beginning of the new period.

I therefore believe that regulators should signal by their behaviour that they do not intend to pass on all efficiency gains to customers as soon as a price cap period is finished. One way of bringing this about is to set the price cap at constant annual rate over the period concerned and set it at such a level that expected profits come to be a reasonable rate of return on capital employed at the end of the period. If excess profits are being earned as a result of efficiency, this approach will cause a gradual decay of the excess but leave some reward for the regulated company.

VII. MID-TERM REVIEWS

One important question that the regulator has to answer concerns the case for altering the price cap before the end of the stated term. Once a price cap has been set, should it be left unaltered in all circumstances? I do not

think that any absolute assurance can or should be given that the price cap will remain unaltered. The purpose of the price control is to encourage efficiency, and changes should not be made in a way that will eliminate the incentive to efficiency. However, if unexpectedly large profits—or indeed unexpectedly small profits—have been made because of unexpected changes in circumstances, rather than efficiency, it seems to me that a change in the formula can legitimately be made and, in some circumstances, will virtually be a political necessity. However, this is a sensitive matter, and the regulator must proceed with care. Frequent interventions, giving the impression of “fine tuning,” may make the price cap approach come to seem very much like short-term rate-of-return regulation, particularly given the practical difficulty of distinguishing efficiency from uncontrollable effects. I believe that mid-term changes in the price cap should be quite rare. I have once conducted an investigation to assess whether or not a change was needed, but I have not yet made a mid-term change.

VIII. SCOPE OF PRICE CAP REGULATION

I want next to give some attention to the question of coverage of price cap regulation. What proportion of the business should be covered by price caps, and to what extent should prices be controlled individually instead of relying on an overall average control? My starting point is that the prices of all services that are subject to significant monopoly power should be covered by a price cap. My basic reason for believing this is that price caps are intended to provide an incentive for greater efficiency, and this incentive is valuable in all areas of business even though the potential for efficiency may be greater in some areas than others.

Some services—notably, for example, private circuits—have been omitted from price control in Britain. People can complain to me, if they believe that prices are excessive, and I then have the duty to conduct an investigation, and I can move to modify the licence and introduce a price control if I consider it desirable. However, in practice, my investigation has to rest heavily on an assessment of whether or not the rate of return being earned is excessive, and, consequently, the position comes to be very similar to rate-of-return regulation. For this kind of reason, I have publicly stated my belief that it would be desirable to have price cap regulation of private circuit prices, and I am currently working on procedures to bring this about.

One notable area of service which is still not subject to price control is international telephone calls. This is an area where British Telecom clearly continues to wield monopoly power. However, international telephone pricing raises some special difficulties because of the way in which international prices are

set. An international price exists which is paid by one administration to another for delivering an international call. This price can be altered only by bilateral agreement. Prices for outgoing international calls from Britain are already relatively low by international standards, and if a price control were to cause further reductions relatively, the effect could be to provide a strong incentive to originate calls from Britain, and this could cause a sharp swing in the economics of international telephony with some detrimental effect on the national balance of payments. Considerable scope exists for the development of competition in international telephony, and this is already exercising a constraining influence on prices. Given the special difficulties of international telephony, I have decided not to introduce a formal price cap at present, but I shall keep the area under review and be ready to introduce a control if the need should become apparent.

IX. CAPS FOR INDIVIDUAL SERVICES

I have already mentioned that the British approach applies the price cap controls to broad averages. The existing price cap is an average for a basket of switched services, and the price cap I propose for private circuits is likely also to be aimed at a weighted average. In part, this approach has been adopted because of a recognition of the difficulty in defining costs and optimal prices at the level of individual services, taking account of time-of-day variations. Because of this difficulty of definition, we have thought it preferable to allow flexibility to the regulated company, though this is always subject to the right to intervene if an individual price is set at a grossly inappropriate level, implying anticompetitive behaviour or abuse of monopoly position. The potential threat of a licence amendment to deal with any such anomaly is a real one and is likely to be a sufficient sanction in most practical cases.

Accordingly, the only individual price cap in the British system is one designed to limit the speed of rebalancing of prices. We recognise the basic case for relating call charges more closely to usage-sensitive costs with the implication that standing charges will have to rise relatively. However, an excessively rapid rise would cause economic disruption—because people had made plans on the assumption of a reasonable stability in prices—and would also be politically controversial. We have, therefore, limited the speed of adjustment of standing charges to 2 percentage points above the rate of inflation, and we have made special arrangements for the protection of people with low incomes in the form of a low user tariff involving a low standing charge.

X. ACCOUNTING PROBLEMS

In discussing individual prices, I have touched a little on difficulties of cost measurement. The problems of accounting measurements to support regulation are a subject of great interest to me as a former accounting professor, and they are complex enough and interesting enough to merit a separate paper in their own right. I cannot do more in the present paper than leave one or two signposts—but two points are perhaps of particular interest in the current context.

I should first acknowledge that one reason why price cap regulation was considered attractive was the belief that rate of return could not be measured with acceptable accuracy—or even with any knowledge of how accurate the measurements were—and that price cap regulation avoided the need for accounting measurements. The difficulty was seen as being twofold. First is the difficulty in measuring the results for one year separately from another; and second is the difficulty of separating the results of regulated businesses from unregulated businesses, given the existence of joint costs. Regulators could indeed set a price cap independently of any accounting measurement if they were willing to settle for a price cap that broadly reflected attainable productivity improvements. However, for the reasons given above, I reject this approach, and I believe that the price cap must be based on computations of expected rate of return. Consequently, I cannot avoid the accounting difficulties. I therefore think that one has to proceed with the best attainable measurements under accounting. I recognise that practical measurement uncertainties will be inevitable. Where joint costs are concerned, we are dealing with a problem that is known to be unanswerable. However, I do not believe that the size of these difficulties is sufficient to invalidate the whole procedure.

One of the great accounting controversies concerns whether investment should be revalued at current prices for assessment of rates of return on capital employed. In accountants' jargon, a choice must be made between historical cost accounting and current cost accounting. I believe that little room exists for dispute about the preferability of current cost accounting from a point of view of the allocation of economic resources. However, businesses do not like to report to their shareholders on a current cost accounting basis because it makes profits look relatively small, and the accounting profession does not yet force them to do so. Many regulated companies would doubtless like to continue reporting to shareholders on the traditional basis but to be allowed to conduct their dealings with regulators on the basis of current values of assets. That, of course, would be intolerable because it might lead to the impression that companies were being allowed to earn very large rates of return, and this would lead to strong political pressure to change the system. If we have to live in a world in which company performance is normally assessed on the traditional accounting basis, using out-of-date values for assets, I see no practical alternative to using these numbers also for regulation.

XI, QUALITY OF SERVICE

I want, finally, to say a few words about incentives for quality of service. I have already noted that some incentive for achieving the desired level of quality of service should be incorporated in the price control arrangements. The first evident requirement is public accountability. Statistics for the main aspects of quality of service should be compiled regularly and published together with performance targets. If performance falls short of target, the regulated company should be required to report on the reasons for the shortfall and the plans in hand to correct matters. British Telecom commenced reporting under such a system in October 1987.

Public accountability on quality of service may be sufficient. However, financial incentives are more convincing, and regulators surely need to have plans for such incentives ready if not actually to apply them immediately. Under the British system, financial incentives could be introduced in at least three ways. One would be to link prices to quality-of-service statistics: price caps would be reduced if quality of service fell below target levels. A second possibility would be to require specified service levels to be attained as a licence condition; if the target levels were not met, financial penalties could then be applied for breach of licence conditions. A third possibility is to require the regulated company to accept some contractual liability to customers for quality of service. Contractual liability has the advantage that it leads to compensation of the customers who have suffered.

We have just introduced an arrangement under which British Telecom will accept contractual liability with effect from April 1, 1989. The liability will relate to provision of exchange lines and fault repair. It is limited in amount. In case of default, customers will be paid £5 per day in compensation unless British Telecom can show that it did all that a reasonable telephone company could have done. Higher amounts may be claimed up to a limit of £5,000 if losses can be proved. The amounts are low partly because of a wish not to put up prices as a consequence of the imposition of heavy costs. However, we believe that the incentive effect is likely to be strong, and we shall keep the working of the system under review, ready to seek an increase in the amount of compensation if it seems desirable.

I have not sought to apply the other methods of giving financial incentives to improve quality of service. They would add complexity to the regime, and present indications are that they are not needed. However, if quality of service were to deteriorate in the future, the complexity would be worth bearing, and I should not hesitate to seek the introduction of additional measures.

XII. CONCLUSION

Perhaps I can conclude by re-emphasising that we are pleased with the way price cap regulation is working in the UK. We believe we have set our controls at a level which gives British Telecom a tough challenge but also the opportunity to benefit from improvements in efficiency. Price cap regulation can make everyone concerned better off. One never knows what would have happened if an alternative system had been used, but the results of our present system are encouraging. British Telecom is making good profits, and the customer is receiving good protection. In the nine years following privatisation, price cap regulation will have reduced prices by at least 30 percent relative to inflation.

Things are also going well with quality of service. We have introduced arrangements for compensating customers for poor service which we believe to be unique worldwide. Actual quality of service is better than it has ever been. About 91 percent of faults are repaired within two working days, and British Telecom is on track to meet its target of repairing over 90 percent of business faults in five hours and residential faults in nine hours. Congestion of the network is at an all-time low, and operator response times are high. Customer satisfaction is also high. OFTEL conducted a survey recently in which customers were asked to rate service on a five-point scale. Eighty-three percent said that they were very satisfied with service or fairly satisfied with service—the top two points on the scale. As the difficulties of 1987 recede, it is now clear that we are not incurring any deterioration of quality of service because of our use of price cap regulation.

ARIZONA CORPORATION COMMISSION
TESTIMONY OF HARRY M. SHOOSHAN III
STRATEGIC POLICY RESEARCH, INC.
ATTACHMENT C, OCTOBER 27, 2000

Summary of State Regulation©

State	Price Regulation	Earnings Regulation During Price Cap	Earnings Review as Condition of Price Cap	Earnings Deregulation by Statute
Alabama	Yes	No	No	No
Alaska	No	N/A	N/A	No
Arizona	No	N/A	N/A	No
Arkansas	Yes	No	No	Yes
California	Yes	Yes	N/A	No
Colorado	No	N/A	N/A	No
Connecticut	Yes	No	Yes	No
Delaware	Yes	No	No	Yes
District of Columbia	Yes	No	No	No
Florida	Yes	No	No	Yes
Georgia	Yes	No	No	Yes
Hawaii	No	N/A	N/A	No
Idaho	No	N/A	N/A	No
Illinois	Yes	No	Yes	No
Indiana	Yes	No	in litigation	No
Iowa	Yes	No	No	No
Kansas	Yes	No	No	Yes
Kentucky	Yes	No	No	No
Louisiana	Yes	No	No	No
Maine	Yes	No	Yes	Yes
Maryland	Yes	No	Yes	Yes
Massachusetts	Yes	No	No	No
Michigan	Yes	No	No	Yes
Minnesota	No	N/A	N/A	No
Mississippi	Yes	No	No	No
Missouri	Yes	No	No	Yes
Montana	No	N/A	N/A	No
Nebraska	Deregulated	No	No	Yes
Nevada	Yes	No	Yes	No
New Hampshire	No	N/A	N/A	No
New Jersey	Yes	No	No	Yes
New Mexico	No	N/A	No	Yes
New York	Yes	No	No	No
North Carolina	Yes	No	Yes	Yes
North Dakota	Yes	No	No	Yes
Ohio	Yes	No	Yes	No
Oklahoma	No	N/A	No	Yes
Oregon	Yes	No	No	Yes
Pennsylvania	Yes	No	No	No
Rhode Island	Yes	No	No	No
South Carolina	Yes	No	No	Yes
South Dakota	Yes	No	No	No
Tennessee	Yes	No	No	Yes
Texas	Yes	No	No	Yes
Utah	Yes	No	Yes*	Yes
Vermont	Yes	No	N/A	No
Virginia	Yes	No	No	No
Washington	No	N/A	N/A	No
West Virginia	Yes	No	No	No
Wisconsin	Yes	No	No	Yes
Wyoming	Yes	No	Yes	No
TOTAL YES/NO	Yes: 40	No: 39	No: 30	Yes: 21

N/A Not applicable.

*No follow-up review.

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